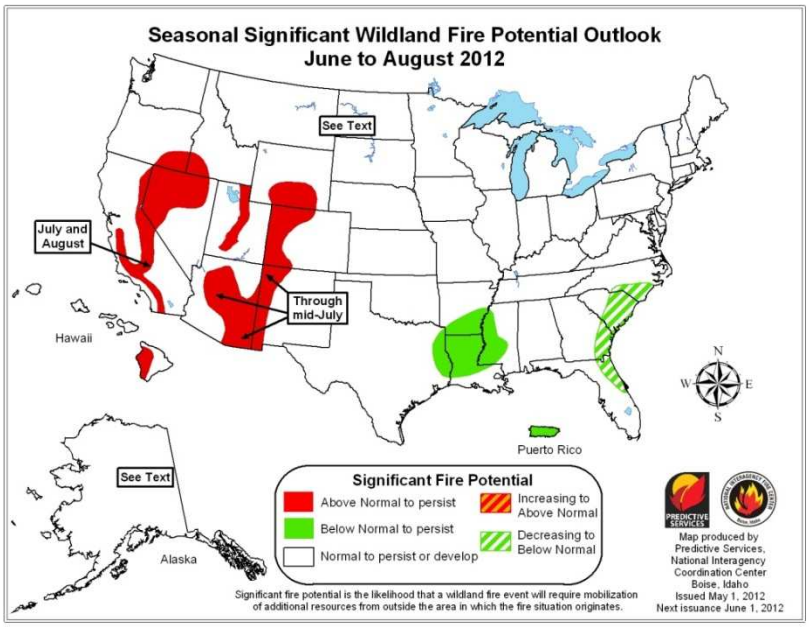
TETON INTERAGENCY FIRE

2012 WILDLAND FIRE OUTLOOK

May 25, 2012



Seasonal Significant Wildland Fire Potential (issued May 1).

SUMMARY

The winter season was dominated by a continuation of a weaker La Niña pattern that evolved into neutral ENSO conditions. These changing patterns resulted in:

- a much warmer than normal April (ranging from 4-6 degrees above normal for much of Wyoming)
- a dryer than normal trend for April and May.

For the Teton Interagency Fire zone, the fine-fuel buildup from last season's wet year followed by a drier and warmer than normal spring may result in an earlier than normal onset of fire season. Southern and eastern areas of the Teton Interagency Fire zone are drier than northern and higher elevation sites.

- The US Drought Monitor shows 78% of Wyoming at Abnormally Dry or Moderate Drought, compared to 0% of statewide drought at this time last year, with the southern portions of the TIDC at Abnormally Dry.
- 2011-12 Year-to-date precipitation at Moose Weather Station = 86% of normal
- 2010-11 Year-to-date precipitation at Moose Weather Station = 186% of normal

Regional outlooks indicate normal to above normal significant fire activity in mid-season and potential for normal and perhaps above-normal fire activity in our typical August-early September fire season. Higher elevation sites that have seen less activity in recent years are more likely to support fire activity this season. Also, beetle-killed and stressed trees may be more available to ignition in a drier than normal summer. Much of this outlook is dependent on early summer moisture patterns during the next six weeks, as well as global shifts in La Niña / El Niño weather patterns that may impact monsoonal flow which in turn affects precipitation during fire season and lightning starts.

CLIMATE AND FUELS OUTLOOK

(1) Year-to-Date Precipitation for Area Weather Stations

Area precipitation for the water year to date (October through May) reflects a warmer than normal winter, with normal precipitation mid-winter with drier than normal months in November and March-April-May. At the Moose weather station, three of the last nine months recorded precipitation ranging from 41-66% of normal while the remaining months trended at normal, resulting in cumulative water-year precipitation at 86% of normal. (Note: other stations tracking water-year-to-date in the area were not available at this time.)

Table 1a: Precipitation at Moose Weather Station (Grand Teton National Park)

		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	YTD total
Monthly Precipitation	1987-88	0.09	1.27	2.59	2.37	0.75	0.99	1.12	1.61	10.79
(inches)	1999-00	0.08	0.67	2.03	2.27	5.04	1.03	0.4	1.38	12.9
	2009-10	3.59	0.30	0.97	2.05	1.28	1.18	2.51	1.57	13.45
	2010-11	3.31	4.5	3.57	3.84	1.54	3.84	3.64	4.04	28.28
	Normal	*1.27*	*2.11*	*2.49*	*2.57*	*1.95*	*1.56*	*1.45*	*1.94*	*15.34*
	2011-12	**1.41**	**1.25**	**2.56**	**2.72**	**2.00**	**1.55**	**0.98**	**0.79**	**13.26**
Percent of NORMAL	1987-88	6%	60%	102%	92%	40%	63%	75%	84%	70%
	1999-00	6%	32%	80%	88%	267%	66%	27%	72%	83%
	2009-10	256%	14%	38%	79%	68%	75%	168%	82%	87%
	2010-11	236%	213%	141%	148%	81%	245%	244%	212%	183%
	2011-12	**101%**	**59%**	**101%**	**105%**	**106%**	**99%**	**66%**	**41%**	**86%**

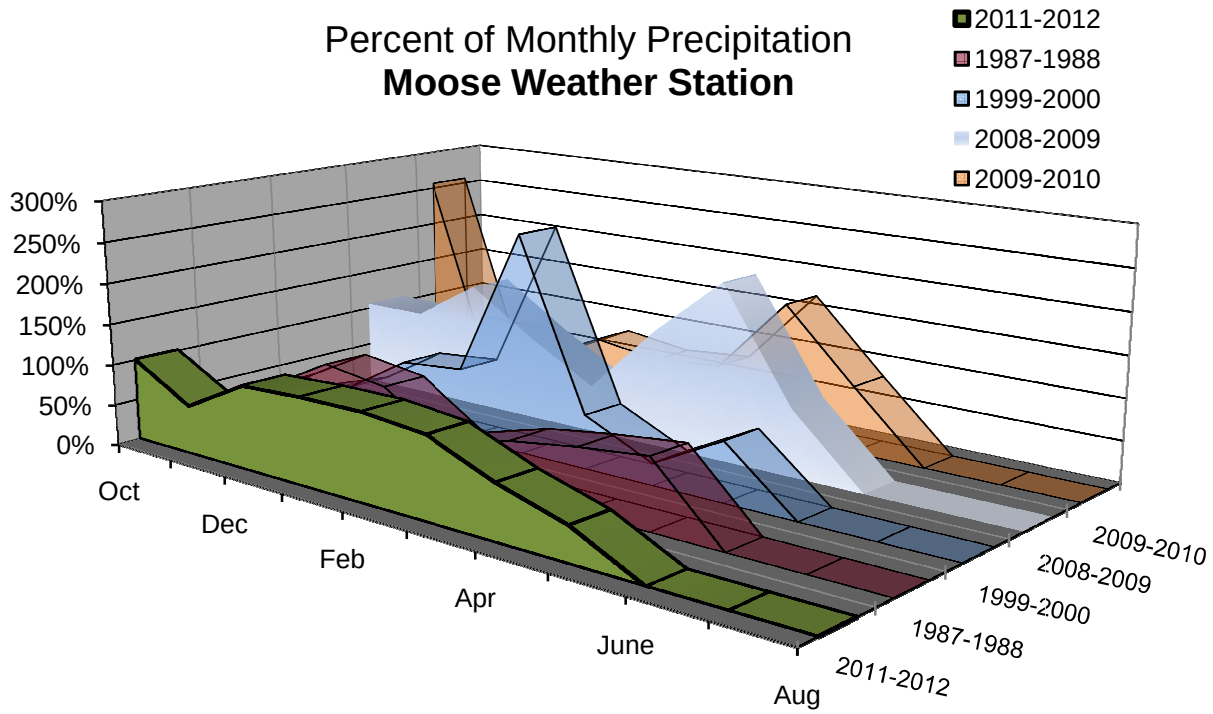
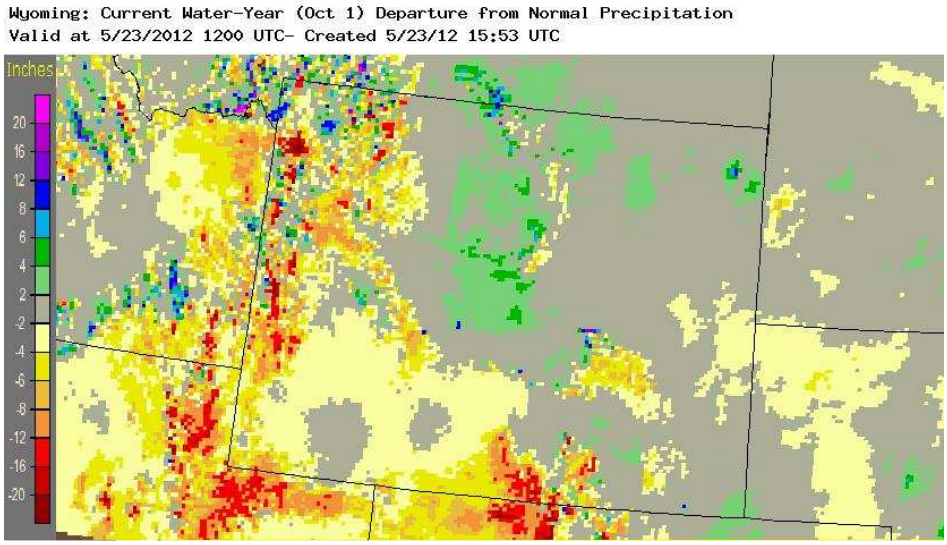


Figure 1b. Wyoming, Current Water-Year-to-Date, Departure from Normal Precipitation. Most areas in the Teton Interagency Fire zone exhibit a moisture deficit when compared to normal year-to-date precipitation. http://water.weather.gov/precip/.



(2) Area Snowpack and Streamflow

Snowpack, accumulated precipitation, and streamflow in western Wyoming tracked in the normal ranges in fall and early winter, with snowpack melting off earlier than normal, reflected in below normal soil moisture and normal streamflows (though in marked contrast to the flood levels of the prior 2011 season).

Table 2: Percent of Average Snow Water Content and Precipitation by Basin (as of 05/25/2012) (http://www.wcc.nrcs.usda.gov/reports)		
	Snow Water Content	Total Precipitation (Water YTD)
Snake River	50 %	90 %
Upper Green River	31 %	84 %
Yellowstone/Madison basin	76 %	99 %
Wind River	20 %	76 %

Figure 2: As of May 24, the Westwide Snow Water Content displays a marked contrast with last year's wet conditions. This year's drier and warmer than normal winter is reflected in a wide swath of snow water content levels at 25 % on a west-east transect from central Oregon, Idaho, and Wyoming, and to the south. http://www.wcc.nrcs.usda.gov/snow/snotel-wereports.html.

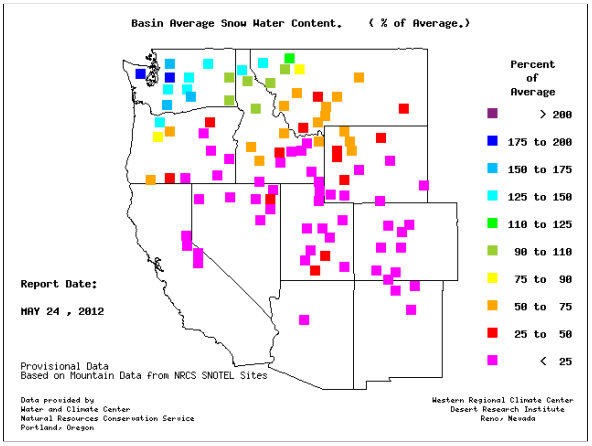


Figure 2: Basin Average Snow Water Content

Figures 3a-d. SNOTEL Water Year to Date, Snow Water Equivalent for Grassy Lake and Base Camp (North Zone), Elkhart Park Guard Station (East Zone), and Snider Basin (West Zone).
http://www.wcc.nrcs.usda.gov/snotel/Wyoming/wyoming.html.

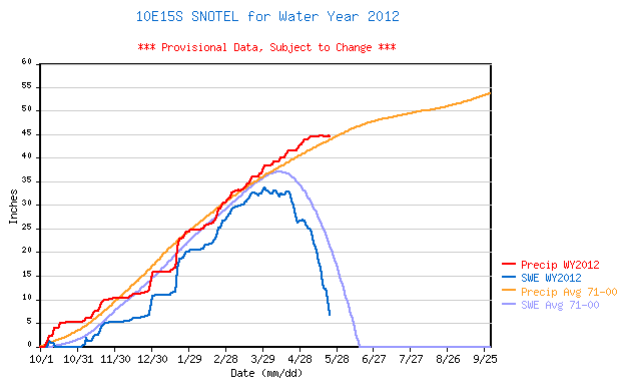


Figure 1a: Grassy Lake Snotel

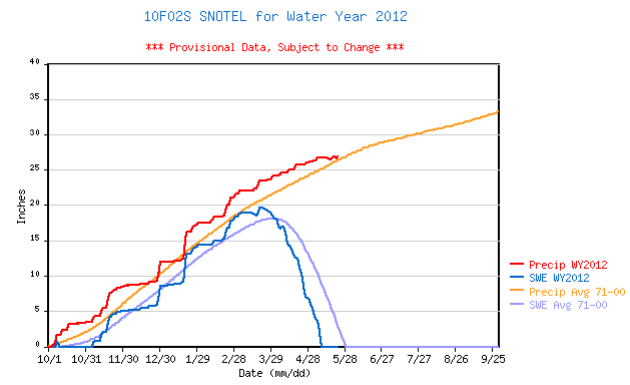


Figure 2b: Base Camp Snotel

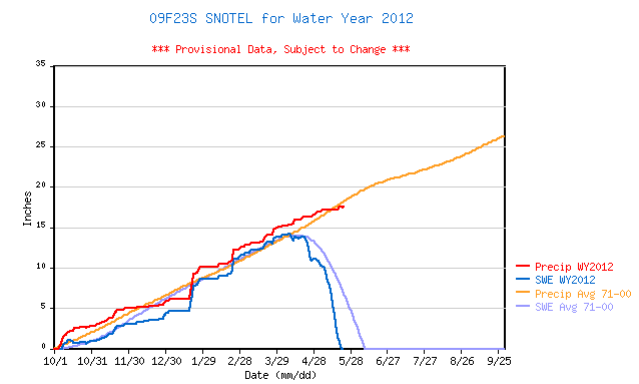


Figure 2c: Elkhart Snotel

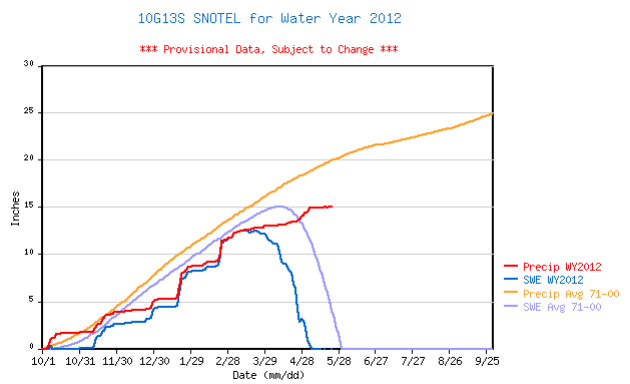


Figure 2d: Snider Basin Snotel

Figure 4. This trend is confirmed in the Standardized Precipitation Index (September through May), which documents the long-term transition this year from drought to moister conditions in much of the Rocky Mountain West and Northwest. http://www.ncdc.noaa.gov/img/climate/research/prelim/drought/spi09_pg.gif

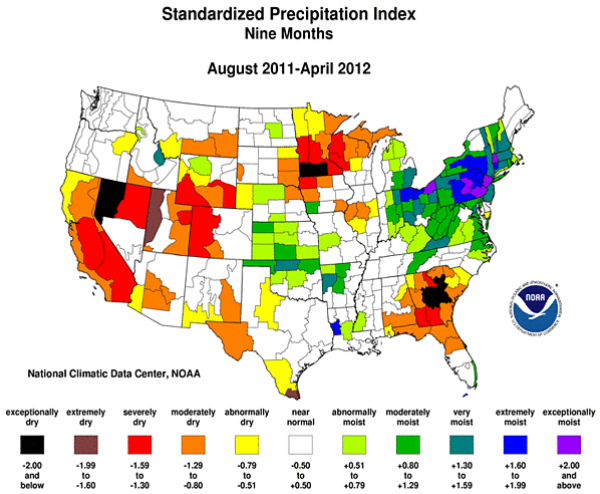


Figure 4 Standardized Precipitation Index

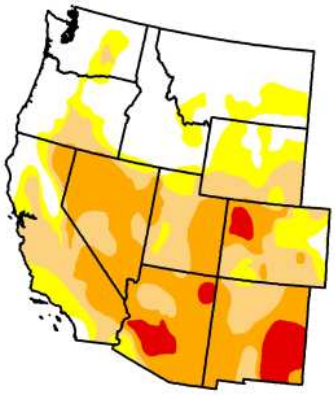
(3) Drought Monitor

Drought continues in the Southwest and returned to central portions of the Rocky Mountains and Great Basin. In the West, 70% of the region is experiencing abnormally dry to drought conditions compared to 24% at this time last year. In Wyoming nearly 80% of the state is experiencing abnormally dry to drought conditions, compared to 0% drought at this time last year. See Figure 5a-5b below and U.S. Drought Monitor West for updates and details: (http://drought.unl.edu/dm/pdfs/west_dm.pdf).

U.S. Drought Monitor
West
May 22, 2012
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	30.25	69.75	52.87	30.72	4.66	0.00
Last Week (05/15/2012 map)	31.27	68.73	50.07	27.34	4.02	0.07
3 Months Ago (02/21/2012 map)	32.32	67.68	42.87	11.59	2.56	0.83
Start of Calendar Year (12/27/2011 map)	48.49	51.51	20.05	12.22	2.67	0.78
Start of Water Year (09/27/2011 map)	66.72	33.28	19.04	14.99	9.30	3.81
One Year Ago (05/17/2011 map)	76.18	23.82	19.58	14.72	8.78	3.28



Intensity:
D0 Abnormally Dry
D1 Drought - Moderate
D2 Drought - Severe
D3 Drought - Extreme
D4 Drought - Exceptional

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

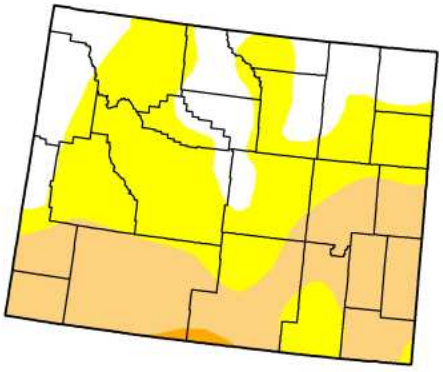
http://droughtmonitor.unl.edu

Released Thursday, May 24, 2012
Brad Rippey, U.S. Department of Agriculture

U.S. Drought Monitor
Wyoming
May 22, 2012
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	21.81	78.19	33.83	0.70	0.00	0.00
Last Week (05/15/2012 map)	28.62	71.38	7.65	0.08	0.00	0.00
3 Months Ago (02/21/2012 map)	87.11	12.89	2.48	0.00	0.00	0.00
Start of Calendar Year (12/27/2011 map)	99.84	0.16	0.00	0.00	0.00	0.00
Start of Water Year (09/27/2011 map)	98.26	1.74	0.00	0.00	0.00	0.00
One Year Ago (05/17/2011 map)	100.00	0.00	0.00	0.00	0.00	0.00



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(4) Fuel Moisture

Fuel moisture sampling of live and dead fuels began in early May. Initial sampling and trends indicate an early to normal greenup, with below normal trends beginning to appear in live woody fuels (sagebrush ranging from 119-133%; conifer ranging from 100-140%) and in 1000-hour fuels (ranging from 23-50%), with May 15 readings

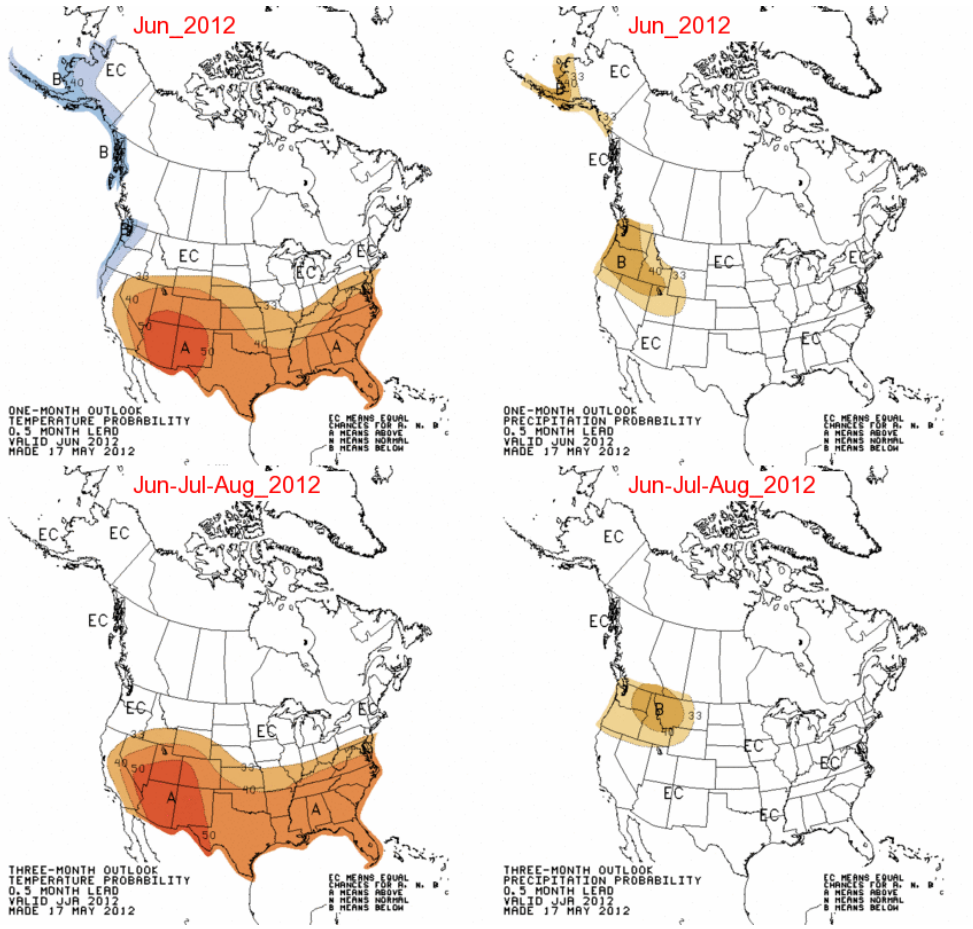
trending similar to June 15 at representative sites. At representative lower-elevation conifer sites, with Live Woody Conifer at 100% and 1000-hour dead fuels at 23%, the trend indicates initial conditions that may support an earlier start to fire activity and normal to above normal potential for significant fires by mid- to late-season. However, there is less long-term data for these early-season fuel moisture sampling, as early readings at these sites have often been limited by snowpack.

For fuel conditions at RAWS weather sites, the green-up date has been slightly earlier than typical but within normal range.

(5) Long-term Temperature and Precipitation Outlook

Climate Prediction Center outlooks reflect a projected transition from La Niña conditions to neutral conditions this summer, with the potential for a shift to El Niño conditions from early to late summer (with the timing uncertain). A warmer outlook to our south (map graphics, below left) and a drier outlook for the Northwest (map graphics, below right) may overlap in the Central Rockies region, indicating a potential for a more active than normal fire season in late July and August.

Figure 6: Temperature and Precipitation Outlook – June and June through August.



GEOGRAPHIC AREA OUTLOOKS

The Teton Area fire zone is within the Eastern Great Basin geographic area. Fire seasons in our zone also track with similar conditions in adjacent areas within the Rocky Mountain and Northern Rockies geographic areas, which converge within the Greater Yellowstone Area (GYA) and share common trends of fire activity. Each of the pre-season outlooks excerpted below indicate normal to above-normal potential for significant fire activity with uncertainty in the outlooks based on the timing and impact of seasonal drying trends. Mid- and late-season and

lower-elevation ignitions may exhibit above-normal fire activity, and higher elevation sites may see above-normal activity, in particular when compared to recent fire seasons.

Excerpts of Regional outlooks from "National Wildland Significant Fire Potential Outlook" (May 1, 2012, NIFC Predictive Services): http://www.nifc.gov/nicc/predictive/outlooks/monthly_seasonal_outlook.pdf.

Eastern Great Basin: Slightly above normal significant fire potential is expected for the higher elevations of central Utah and the southwest corner of Idaho. Normal significant fire potential is anticipated elsewhere across the Area. The forecast for above normal significant fire potential is expected to occur later in the season during July and August when peak heating and dryness moves into the region. The high elevations of Utah have seen relatively little activity the last few years with heavier snowpack and wet spring weather. This forecast should emphasize the increased fire potential in these areas not only compared to normal, but also in comparison to recent experience. The low elevations of southwestern and western Utah are also expected to see increased activity relative to the past few years, but it's anticipated that the fire activity will remain normal which is generally fairly active. The below normal snowpack and recent warm temperatures across Utah have allowed heavier fuel types at the higher elevations to begin drying out earlier and these will likely become available to burn sooner than normal. Abnormally dry to moderate drought conditions have spread across the state of Utah in the past year and are not expected to see improvement over the next few months. While Idaho began with a precipitation deficit; frequent late winter and spring storms have brought precipitation totals back to near normal for much of the state, especially across the higher elevations. Portions of southeast Idaho still remain dry. Much of last year's abundant grass crop still stands across the lower elevations of western Utah and southern Idaho; however, with green up already underway this year, the effects of this crop are somewhat mitigated until later in the season.

Two forecast scenarios exist for the first part of the fire season that revolve around ENSO. The first, a neutral ENSO pattern, indicates warm and dry weather conditions to continue across the southern half of the Area. This would usher in an early start to fire season across all elevations and likely increase activity through the summer months. The second scenario, a transition to El Niño conditions, calls for a switch to cooler, wetter than normal conditions for May and June. Elements from both scenarios are incorporated into the forecast for the Eastern Great Basin. With the higher elevations of Utah having already lost most of their snowpack heavier fuels typically found at higher elevations will not be as affected by intermittent rain showers and will maintain higher significant fire potential through the period. Lower elevations and fine fuels are heavily influenced by any increase in relative humidity which will likely keep low elevation fires across the state constrained during these months. The above normal area in southwest Idaho takes into account the available standing grass crop from last year and the probability that this region will see warm and dry conditions by July and August which will likely be enough to increase fire activity into the above normal category.

If a quick switch to El Niño occurs, this may bring very warm, dry weather to the higher elevations of Idaho by the end of summer. These conditions could increase significant fire potential to above normal, especially over eastern Idaho where a slight dry signal already exists.

Northern Rockies: ENSO neutral conditions are expected to continue through May as equatorial sea surface temperatures approach normal conditions. Looking back, March and April were unusually warm and dry for areas east of the divide, with several large pre-green up grass fires occurring. While abundant standing fine fuel remains in place, the immediate fire potential has been somewhat mitigated by a substantial wetting rainfall event that impacted the Area the last week April. That event along with periodic weaker wetting events should provide enough moisture to allow for full green up to occur in May. Along and west of the divide, normal green up is occurring. As a result, the western half of the Area remains near normal significant fire potential. Snow pack should continue to melt normally in the absence of any unusual warm spells. May and June are the wettest months for the Area so anticipate some additional drought relief for eastern Montana and North Dakota.

There is much uncertainty about significant fire potential for the summer. There are two very different scenarios possible during this period depending on the eventual ENSO state. If a transition to weak El Niño occurs, which is the most likely scenario, anticipate a normal start to fire season in early to mid-July. July could stay relatively dry and see some grass fire activity. However, August should be cooler with wetting thunderstorms and periodic systems moving across the region. These storms will help keep the fuel dryness below critical levels and significant fire potential would remain normal throughout the Area. If we stay in neutral conditions, anticipate a normal start to fire season, probably in early July. The entire Area would stay warm and dry and all classes of fuels would dry, possibly to critical levels. With the ongoing drought east of the divide, there could be above normal significant fire potential. West of the divide would also see significant drying. Heavy carry over cured grass loading may be a problem for eastern Montana and western North Dakota if significant moisture is not received in May and June. If this area remains dry, expect above normal significant fire potential for central and eastern Montana and the

west half of North Dakota. While this scenario is not as likely as the first, there is enough uncertainty in the outlook that it is a possibility.

Rocky Mountain: Normal significant fire potential is forecast for the Rocky Mountain Area during May. Although snowpack was depleted early this spring, especially in Colorado and the Black Hills, as a result of a very warm and dry March, precipitation received during the month of April has helped to facilitate green up of fine fuels across the Area. On average May is one of the wetter months for the Area, and long range forecasts for the month are not indicating a substantial lean towards either drier or wetter than average conditions. Thus, the combination of green up of fine fuels across the area and occasional precipitation opportunities, are the primary factors in significant fire potential for May being normal. Normal fire activity during the month of May implies that some mainly short duration large fire activity can be expected, but with less chance of multiple long duration significant fires.

Fire potential over the Rocky Mountain Area is expected to be normal for much of the Rocky Mountain Area for June through August, however, above average significant fire potential is anticipated for western Colorado and south central Wyoming. Long term drought exists in the above average fire potential areas, especially west of the continental divide in Colorado. Additionally, indicators point towards a general warming trend in the equatorial Pacific sea surface temperatures over the next few months, with neutral to weak El Niño predicted during the summer period. The resultant weather pattern for the Area includes near to above average temperatures across the region during June through August, while precipitation east of the divide is expected to be near to above normal, with a drier regime west of the divide.

CURRENT FIRE ACTIVITY

Fire Activity: Teton Interagency Dispatch Center

Early snowmelt and drying trend has resulted in an earlier greenup. The prescribed fire window was also earlier than typical. In Grand Teton National Park this spring, there was one prescribed burn for 165 acres; in Bridger-Teton National Forest, there were four prescribed burns for 1166 acres.

Table 4: Year-to-Date Fire Activity (Unplanned Ignitions)

	Bridger-Teton National Forest		Grand Teton National Park	
	Fires	Total Acres	Fires	Total Acres
June 5, 2007	2	5.1	1	0.1
June 1, 2008	1	0.1	0	0
June 1, 2009	1	0.1	0	0
June 1, 2010	4	0.4	0	0
June 1, 2011	1	5.0	0	0
40-year AVERAGE (to June 1)	*1.5*	*8.1*	*0.4*	*1.0*
Year-to-Date to May 25, 2012	**2**	**0.35**	**1**	**0.1**

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